A PROFILE OF MULTIPLE INTELLIGENCE FOR HIGH ACHIEVERS AND NORMAL STUDENTS – A CASE STUDY IN SARAWAK

Rio Sumarni Shariffudin, [1]Lee Ming Foong
Fakulti Pendidikan,
Universiti Teknologi Malaysia,
81310 UTM, Skudai,
Johor Darul Ta'zim, Malaysia.
rio.sumarni@gmail.com
[1]mingfoonglee@gmail.com

ABSTRACT

Many research findings have shown that learners encountered many learning difficulties. However, for effective learning one has to know oneself and having knowledge about one's strengths and weaknesses. The process of teaching and learning will be more effective and meaningful when teachers and learners know their potential, their unique styles, strengths and weaknesses in learning. Howard Gardner's theory of multiple intelligences is a psychological and educational theory espousing that ten types of "intelligence" exist in humans, each relating to a different sphere of human life and activity. Nowadays, how learners interpret knowledge differs greatly from what used to be perceived by the teachers. Also how the teachers deliver the knowledge may not match the expectations of the learners. As a result, teachers' instructional methods became inefficient and learners failed to learn. The dramatic change in learners should be balanced by an equal change in teachers' instruction especially among high achievers. This paper examines the Multiple Intelligences pattern among the high achievers and the normal student. This research compares between the high achievers and the normal students with respect to their preferences of learning style. The respondents comprised 150 normal students and 160 high achievers from secondary schools around Sarawak. The Multiple Intelligences Inventory was modified and validated according to the research needs. The results showed that the normal students posses the following intelligences: Interpersonal> Bodily/Kinesthetic > Musical/Rhythmic > Visual/Spatial> Verbal/Linguistic = Logical/Mathematical > Intrapersonal> Naturalist. Whilst for high achievers posses the following intelligences: Interpersonal> Logical/Mathematical > Intrapersonal> Visual/Spatial> Verbal/Linguistic> Naturalist> Musical/Rhythmic> Bodily/Kinesthetic. Based on these result, a theorectical framework was proposed to develop a software to match students' learning styles (Multiple Intelligence) with computer and web-based learning environments. Through an awareness of preferred learning styles and environments, more effective learning environments can be set up to assist students in their learning.

INTROUDUCTION

An educational innovation toward the end of the century was the recognition that students learn differently from each other. With this revelation, a lot of groundbreaking work has laid a solid foundation for understanding individual differences, such as personality types, learning styles, and multiple intelligences. As we enter the new millennium, differentiation has become enormously important in the delivery of services to all students (Silverman, 2000). Unfortunately methods of instruction remain more or less the same for the normal students as well as the high achievers in the classroom. This causes much frustration especially to the high achievers as a result of the mismatch between their learning and instruction. Thus, a teacher or an educator, has to bear in mind that (Tatyana, 2006):

a. People differ consistently from each other in their preferences (e.g., emotional, environmental) for certain ways of processing information (the 'individual differences' assumption).
b. These individual differences are measurable.
c. Matching or mismatching students' learning styles with instructional techniques affects learning significantly (the 'matching hypothesis')

According to Marland (1972) in S.Deborah, (1998: pg. 277), high achievers and talented students are those identified by professionally qualified persons who by virtue of outstanding abilities are capable of high performance. These are students who require differentiated educational programs and services beyond those normally provided by the regular school program in order to realize their contribution to self and society. Students capable of high performance include those with demonstrated achievement and/or potential ability in any of the following areas singly or in combination:

1. General intellectual aptitude
2. Specific academic aptitude
3. Creative or productive thinking
4. Leadership ability
5. Visual and performing arts

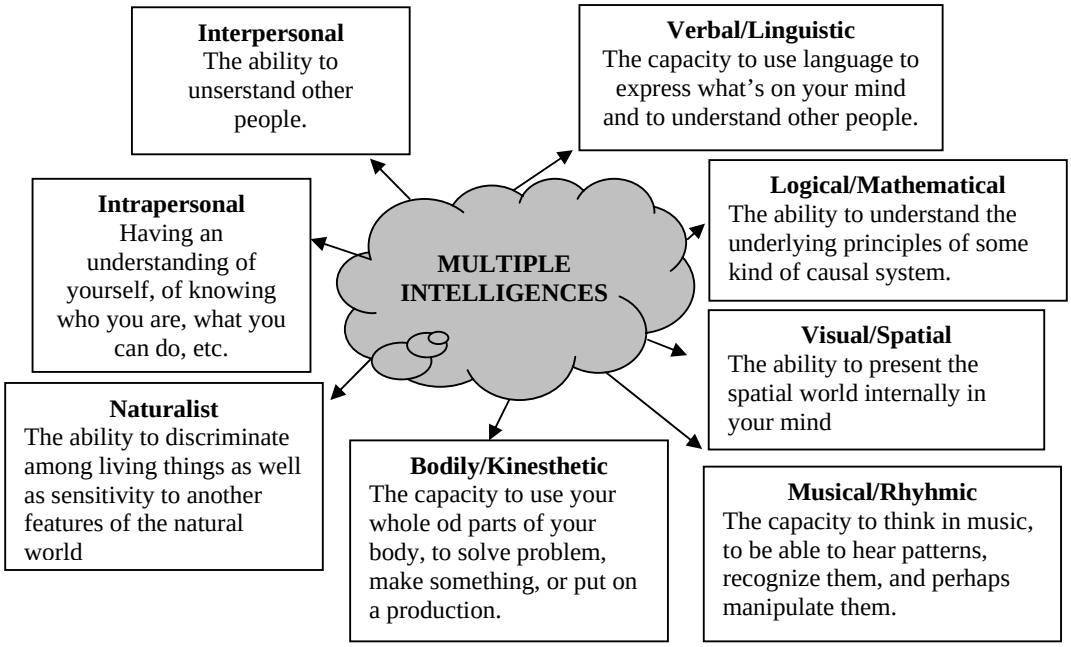
Thus high achievers have different needs compared to the normal students. However, many educators including teachers in schools and instructors in institution of higher education did not recognize this difference, thus are generally disappointed at their attitude towards knowledge and their lack of motivation to learn. High achievers come to the class unprepared and are easily bored by the traditional teaching method that is being practiced by teachers. As a result, teachers are not grooming the high achievers and also high achievers are not developing their own abilities. The failure of helping the high achievers to develop and expand their abilities is a lost to the country as well as the community.

It is clear that teachers or the academic instructors should change their teaching strategies and materials to cater to high achievers' needs and preferences. For instance, Multiple Intelligence proposed by Howard Gardner (1983) implies that learning or teaching should focus on the particular intelligences of each learner. When asked how educators should implement the theory of multiple intelligences, Gardner says, "It's very important that a teacher take individual differences among kids very seriously. The bottom line is a deep interest in children and how their minds are different from one another, and in helping them use their minds well." An awareness of multiple-intelligence theory has stimulated teachers to find more ways of helping all students in their classes. Many research related to this theory indicate that students' multiple intelligences contribute significant differences in their learning output. So, it is critically important that a better understanding of students' intelligences especially for the high achievers, will allow appropriate instructional materials or strategies to be developed according to the diversity of the learners.

MULTIPLE INTELLIGENCE

Howard Gardner (1993) is a psychologist and professor at Harvard University's Graduate School of Education. Based on his study of many people from many different walks of life in everyday circumstances and professions, Gardner developed the theory of multiple intelligences. In brief, Gardner suggested that all human beings possess all nine intelligences in varying amounts and each person has a different intellectual composition. These intelligences are located in different areas of the brain and can either work independently or together. These intelligences may define the human species.

According to MI theory, types of learning styles are Visual/Spatial, Verbal/Linguistic, Logical/Mathematical, Bodily/Kinesthetic, Musical/Rhythmic, Naturalist, Interpersonal and Intrapersonal. A brief description of each intelligence is shown in Figure 1. Each person has two or three dominant intelligences that he or she uses to complete daily tasks, solve problems and respond in stressful situations. In addition, most all people have the ability to develop skills in each of the intelligences, and to learn through them. Gardner previously defined eight intelligences and has recently considered an ninth. He implies that everyone has the capacity for all of the intelligences but develops each intelligence to varying levels.



Firgure 1: Multiple Intelligence Categorization and Description

STATEMENT OF PROBLEM

In Malaysia, high achievers learn the same lessons in the same manner as the normal students in the classroom. They use the same curriculums, teaching strategies, learning approaches and materials as the normal students. The lack of creative and innovative teaching strategies among the teachers is attributable to consequences upon the knowledge and skills in high achievers (Che Mah Yusof & Mariani, 2001). Chiam (1992) stated that the high achievers will be disappointed to the passive learning environment. As a consequence of this matter, high achievers became unwilling, less motivated and are trapped into becoming underachievers. Thus, the purpose of this research was to identify personality of the high achievers that will help teachers to know the high achievers behavior and characteristics in order to design appropriate teaching strategies and materials.

The specific objectives of the research related to this purpose were:

- To investigate the Multiple Intelligence patterns among the high achievers.
- To investigate the Multiple Intelligence patterns among the normal students.
- To compare the differences among the high achievers and the normal students with respect to their preferences of learning style

METHOD

A case study using a survey was employed in this research. The students' Multiple Intelligence (MI) modes were determined using the Multiple Intelligence questionnaire (© 1999 Walter McKenzie). The MI consists of nine modes, which are Visual/Spatial, Verbal/Linguistic, Logical/Mathematical, Bodily/Kinesthetic, Musical/Rhythmic, Naturalist, Interpersonal and Intrapersonal. Each mode has 10 statements or descriptions that describe an individual. The respondents need to complete each section (mode) by placing a "1" next to each statement that they feel accurately describes them. If they do not identify with a statement, they leave the space provided blank. Then they will total the column in each section. The score in each section signifies the respondent's particular strength.

A total of 160 high achievers and 150 normal students from secondary school around Sarawak were selected randomly as samples. Those who were chosen in this study as high achievers were those who score 6As and above in Penilaian Menengah Rendah (PMR). The samples who participated in the research comprised of 80 male high achievers, and

approximately the same numbers of females high achievers. Whilst the samples from normal students comprised of 75 male and approximately the same numbers of females.

RESULTS

Tables 3-5 below showed the results of this research. To compare multiple intelligences patterns among the high achievers and normal students, data collected were analyzed into eight mode as summarized in Table 3. The result indicated majority of the high achievers (19.49%) and the normal students (43.17%) are inclined towards the interpersonal intelligence. The results also showed that high achievers were almost equally divided among each intelligence. The results showed that the normal students posses the following intelligences: Interpersonal> Bodily/Kinesthetic > Musical/Rhythmic > Visual/Spatial> Verbal/Linguistic = Logical/Mathematical > Intrapersonal> Naturalist. Whilst for high achievers posses the following intelligences: Interpersonal> Logical/Mathematical > Intrapersonal> Visual/Spatial> Verbal/Linguistic> Naturalist > Bodily/Kinesthetic> Musical/Rhythmic as illustrated in Table 4.

Table 3: Comparison of Multiple Intelligences among the High Achievers and Normal Students

Multiple Intelligence	High Achievers (%)	Normal Students (%)
Verbal/Linguistic	11.28	7.19
Logical/Mathematical	14.50	7.19
Visual/Spatial	11.92	9.35
Bodily/Kinesthetic	9.58	15.11
Musical/Rhythmic	9.65	10.07
Interpersonal	**19.49**	**43.17**
Intrapersonal	13.35	6.47
Naturalist	10.23	1.45

Table 4 : Multiple Intelligences Patterns among the High Achievers and Normal Students in Descending Order

In Descending Order	Intelligences High Achievers	In Descending Order	Intelligences Normal Students
↓	Interpersonal	↓	Interpersonal
	Logical/Mathematical		Bodily/Kinesthetic
	Visual/Spatial		Musical/Rhythmic
	Intrapersonal		Visual/Spatial
	Verbal/Linguistic		Verbal/Linguistic Logical/Mathematical
	Naturalist		
	Musical/Rhythmic		Intrapersonal
	Bodily/Kinesthetic		Naturalist

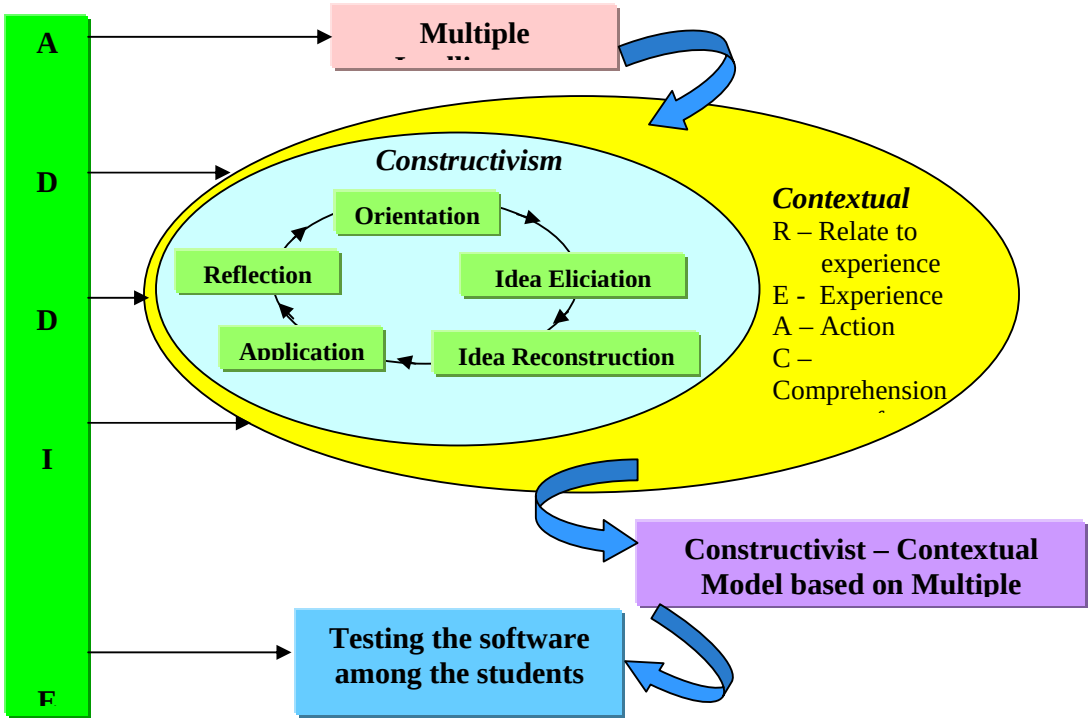
Table 5 showed the comparison of multiple intelligences among the male and female of high achievers and normal students. Findings indicated that majority of the male and female high achievers are interpersonal intelligence. The results conclude that male high achievers possess the following intelligences: Interpersonal> Logical/Mathematical> Visual/Spatial= Intrapersonal> Verbal/Linguistic> Musical/Rhythmic= Naturalist> Bodily/Kinesthetic whilst the female high achievers were Interpersonal> Intrapersonal> Logical/Mathematical> Visual/Spatial> Verbal/Linguistic> Bodily/Kinesthetic> Naturalist> Musical/Rhythmic. The results also implied that majority of the male normal students tended to have Interpersonal> Verbal/Linguistic> Bodily/Kinesthetic> Visual/Spatial> Logical/Mathematical> Intrapersonal = Musical/Rhythmic> Naturalist whilst the female normal students were Interpersonal> Bodily/Kinesthetic> Musical/Rhythmic> Verbal/Linguistic> Logical/Mathematical= Visual/Spatial = Intrapersonal. The result also indicated none of the female normal students tended to have naturalist intelligence.

Table 5: Comparison of Multiple Intelligences among gender

Intelligences	High Achievers		Normal Students	
	Male (%)	Female(%)	Male (%)	Female(%)
Verbal/Linguistic	10.82	11.74	25.30	9.33
Logical/Mathematical	16.45	12.55	6.02	6.67
Visual/Spatial	11.69	12.15	9.64	6.67
Bodily/Kinesthetic	8.23	10.93	10.84	16.00
Musical/Rhythmic	10.39	8.91	4.82	13.33
Interpersonal	20.35	18.62	36.14	41.33
Intrapersonal	11.69	14.98	4.82	6.67
Naturalist	10.38	10.12	2.41	0

RECOMMENDATION

The emerging needs of the information age require a new paradigm for the field of instructional design (Reigeluth, 1996). Recent research in education also indicates that students and their learning change with time. However educational courseware available now are traditional in nature and do not consider learners' needs and preferences, such as their multiple intelligences, personality, critical thinking skills and creative thinking skills. Thus the learners' needs and preferences are often neglected. Jonassen (1988) have mentioned that good instructional designed materials should consider these learners' needs. Figure 2 is an examples on applying constructivism and contextual models in designing instructional material.



ADDIE = Analysis, Design, Develop, Implement, Evaluate

Figure 2: Theoretical Framework for Teaching & Learning

CONCLUSIONS

In this paper, multiple intelligences among high achievers and normal students from some selected schools were determined and described clearly. However, further research need to be conducted to determine if the results of this study may be generalized to the whole population of high achievers in Malaysia. Also teachers of boarding schools(MRSM or SBP) could utilize the research results to design their teaching strategies by incorporating the learners' needs and preferences according to their intelligences. The use of multiple intelligences is found to improve learners' performance and motivation in teaching and learning. Based on these result, a theorectical framework was also proposed to develop a software to match students' learning styles (Multiple Intelligence) with computer and web-based learning environments.

ACKNOWLEDGEMENTS

The authors would like to sincerely thank to Basri Zakaria, Fortanias Anak Buson and Poon Chong Khim for their contribution towards this paper.

REFERENCES

Chiam Heng Keng, (1989). Education For The High achievers: Future Perspective For Malaysia, 2nd National Symposium On High achievers Students: Education For The High achievers, 29 July,1989, Kuala Lumpur, Universiti Malaya, Child Development Centre.

Donna D. Lenaghan (2000). Brain Boosting With Techonology: What Is It And How Do We Know It Enhanced Learning? Barry University.

Gardner, Howard (1983). *Frames of Mind*. Paladin Books, London.

Hawkins, J. (1997/98). High achieversness and Psychological Type. *Journal of Secondary High achievers Education*. 9(2). 57-67.

Myers, I. B. & Myers, P. B. (1980). Gifts Differing. Palo Alto, CA: Consulting. Psychologists Press.

Silverman, L. K. (2000). Identifying visual-spatial and auditory-sequential learners: A validation study. In N. Colangelo & S. G. Assouline (Eds.), Talent development V: Proceedings from the 2000 Henry B. and Jocelyn Wallace National Research Symposium on Talent Development. Scottsdale, AZ: High achievers Psychology Press. (in press)

Smith, Deborah Deutsch. (1998), *Introduction To Special Education: Teaching An Age of Challenge, 3rd Edition*, Boston, Allyn and Bacon.

Tatyana Putintseva (2006). The Importance of Learning Styles in ESL/EFL. The Internet TESL Journal, Vol. XII, No. 3, March 2006: http://iteslj.org/Articles/Putintseva-LearningStyles.html